

**Marked-Up Version of the Amended Claims**

1. (Twice Amended) A communication system having a telephone network that delivers call waiting signaling upon detecting an incoming call, the communication system comprising:

a remote modem that has a hold mode;

a local modem communicatively coupled to the remote modem via shared access to the telephone network; and

the local modem, after detecting the call waiting signaling, directs the remote modem to enter the hold mode then temporarily relinquishes access to the telephone network;

wherein the remote modem remains in the hold mode for no longer than a first time period, and wherein said first time period is ~~communicated~~ transmitted by the local modem to the remote modem.

19. (Amended) A modem coupled to a computing system and, via a telephone line, to a telephone network, the modem communicating with the computing system via a protocol stack, the modem comprising:

a processing circuit having a first mode in which communication is exchanged in an established data session and a second mode in which the established data session is temporarily placed on hold; and

the processing circuit exiting said first mode and entering the second mode in response to signals received via the telephone network and ~~interacting with the protocol stack as if the processing circuit was operating in the first mode~~ manufacturing data and presenting said data to the protocol stack while in said second mode to maintain an appearance of being in said first mode.

32. (Twice Amended) A communication device for communication with a remote device over a communication channel, said communication device being in communication with a handset, said communication device comprising:

~~a receiver capable of receiving an attention signal;~~

an off-hook detector capable of detecting said handset going off-hook, while said communication device is in communication with said remote device, and further being capable of generating an attention signal in response thereto; and

~~a decoder capable of decoding said attention signal;~~

a transmitter capable of transmitting a hold request to said remote device in response to said attention signal;

wherein said handset is placed off-hook by a user for dialing an outgoing call, a ~~handset is in communication with said communication device, and wherein said attention signal is generated as a result of said handset going off-hook~~, and wherein said communication between said devices over said communication channel ceases for a period of time after transmitting said hold request.

44. (Twice Amended) A communication method for use between a first device and a second device in communication over a communication channel, said first device being in communication with a handset, said communication method comprising the steps of:

detecting said handset going off-hook;

transmitting a hold request to said second device in response to said handset going off-hook; ~~and~~

ceasing said communication with said second device over said communication channel by said first device for a period of time; and

dialing an outgoing call using said handset.

47. (Amended) The communication method of claim 46 ~~44~~ further comprising the step of providing a new communication channel.

63. (Amended) A routing method for use in a communication system including first, second and third ~~communication devices modems~~, wherein said first ~~device~~ modem and said second ~~device~~ modem are in communication over a communication line, said routing method comprising the steps of:

requesting said communication to be placed on hold;

receiving an acknowledgement from said first ~~device~~ modem that said communication has been placed on hold for a period of time; and

switching said communication line from said first ~~device~~ modem to said third ~~device~~ modem, such that after expiration of said period of time, said second ~~device~~ modem communicates with said third ~~device~~ modem over said communication line.

64. (Amended) The routing method of claim 63, wherein said step of requesting includes transmitting an attention signal to said first ~~device~~ modem.

65. (Amended) The routing method of claim 63, wherein said step of requesting includes transmitting an attention signal to said second ~~device~~ modem.

66. (Twice Amended) A communication method for use between a first ~~device~~ modem and a second ~~device~~ modem in communication over a communication channel, said second ~~device~~ modem being in communication with an upper layer protocol, said communication method comprising the steps of:

communicating information by said second modem with said first modem;

receiving a hold request by said second ~~device~~ modem;

acknowledging said hold request by said second ~~device~~ modem;

ceasing said communication with said first ~~device~~ modem over said communication channel by said second ~~device~~ modem for a hold period; ~~and~~

~~keeping said upper layer protocol alive by said second device during said hold period.~~

manufacturing data by said second modem; and

presenting said data by said second modem to said upper layer protocol during said ceasing step to maintain an appearance of being in said communicating step.

71. (Amended) A communication method for use between a first ~~device~~ modem and a second ~~device~~ modem in communication over a communication channel, said first ~~device~~ modem being in communication with an upper layer protocol, said communication method comprising the steps of:

communicating information by said first modem with said second modem;

transmitting a hold request by said first ~~device~~ modem;

receiving an acknowledgment of said hold request from said second ~~device~~ modem;

ceasing said communication with said second ~~device~~ modem over said communication channel by said first ~~device~~ modem for a hold period; ~~and~~

~~keeping said upper layer protocol alive by said first device during said hold period.~~

manufacturing data by said first modem; and

presenting said data by said first modem to said upper layer protocol during said ceasing step to maintain an appearance of being in said communicating step.

**REMARKS**

The present amendment is in response to the final Office Action, dated November 7, 2001, where the Examiner has rejected claims 1, 7-10, 19-20, 32-33, 40-42, 44-45, 47-48, 54-56, 63-66 and 68-84. By the present amendment, claim 7 has been cancelled, and claims 1, 19, 32, 44, 47, 63-66 and 71 have been amended. Accordingly, claims 1, 8-10, 19-20, 32-33, 40-42, 44-45, 47-48, 54-56, 63-66 and 68-84 are pending in the application.

Applicants would like to express their gratitude for the Examiner's time, attention and courteous consideration of applicants' remarks during the telephonic interview conducted on December 13, 2001 and December 27, 2001. As discussed with the Examiner on December 27, 2001, applicants have amended claims 1, 19, 32, 44, 47, 63-66 and 71 according to the proposed amendment submitted to the Examiner for a review on December 17, 2001.

Reconsideration and allowance of pending claims 1, 8-10, 19-20, 32-33, 40-42, 44-45, 47-48, 54-56, 63-66 and 68-84 in view of the amendments and the following remarks are respectfully requested.

**A. Objection to Claims 47 and 48**

The Examiner has objected to claims 47 and 48 for depending from a cancelled claim. Claim 47 has been amended to depend from pending claim 44. Also, claim 48 depends from claim 47. It is respectfully submitted that the Examiner's objection has been overcome.

**B. Rejection of Claims 1, 7, 10, 19-20, 32-33, 40-42, 44-45, 54-56, 63-66, 68, 70-77 and 79-83 under 35 U.S.C. § 102(b)**

The Examiner has rejected claims 1, 7, 10, 19-20, 32-33, 40-42, 44-45, 54-56, 63-66, 68, 70-77 and 79-83 under 35 U.S.C. § 102(b) as being anticipated by Civanlar, et al. (EP 0741481 A2).

**1. Rejection of Claims 1, 7 and 10**

Applicants respectfully submit that claim 1, as revised, is not anticipated by Civanlar and is patentable over Civanlar. Claim 1, as revised, in part recites: "wherein the remote modem remains in the hold mode for no longer than a first time period, and wherein said first time period is transmitted by the local modem to the remote modem."

As discussed with the Examiner, it is noted that Civanlar does not remotely suggest or teach that the local modem transmits the hold period to the remote modem. In fact, Civanlar states that the length of the time to hold is specified by S10 register of the remote modem itself. Civanlar goes on to state that S10 register is set to a special value 255, so that the remote modem holds the telephone connection indefinitely. (See col. 9, lines 31-37.) Civanlar does not disclose, teach or suggest that the local modem (or the requesting modem) dictates the hold time. Accordingly, it is respectfully submitted that claim 1, as revised, is patentable over Civanlar.

Claim 7 has been cancelled and the Examiner's rejection with claim 7 has been rendered moot.

Claim 10 depends from claim 1 and for the same reasons stated in conjunction with claim 1 should be allowed.

**2. Rejection of Claims 19-20**

The Examiner has rejected claim 19 pointing to "col. 2, lines 27-55 and col. 6 line 8 through col. 8 line 12". Claim 19, as amended recites: "the processing circuit exiting said first mode and entering the second mode in response to signals received via the telephone network and manufacturing data and presenting said data to the protocol stack while in said second mode to maintain an appearance of being in said first mode." On the other hand, Civanlar does not discuss higher protocol layers in a network environment at all. Civanlar is merely focused on the

interactions between modem A 102 and modem B 104 and ignores the implications of modem on hold in the network environment. On the other hand, the present invention, in part, discloses:

The remote and local modem attempts to maintain the communication session set up between the device housing the remote modem and the device housing the local modem. The remote modem must maintain the appearance of a connection to the upper layer protocols even though the connection to the local modem has been temporarily removed. Similarly, the local modem must maintain the appearance of the connection to the networking protocols using the communication capabilities of the local modem. To carry this out, the remote modem may be communicate with upper protocol layers of the network connection with manufactured data while in the hold mode. The local modem similarly maintains the appearance of a network connection with the application requiring the data by manufacturing data and presenting it to the network stack while the two modems are on hold. (Page 5, line 19 - Page 6, line 4.)

Fig. 4 is an alternate exemplary embodiment of the communication system of Fig. 3 that employs keep alive functionality to maintain continuous data session. Specifically, the ISP modem 321 employs a keep alive function 323 which delivers "keep alive packets" to higher protocol whether or not the client modem 301 sends a hold request. (Page 18, lines 7-10.)

Particularly, there are several layers of protocol involved in the connection between a user's Internet browser, for example and an ISP, and these layers have to be "kept alive" while the client modem 301 relinquishes a link 331 for call waiting services or otherwise. During a data session, while the client modem 301 has relinquished the link 331, the higher protocol layer, for example, TCP/IP, may encounter a time out condition and terminate the data session. (Page 18, lines 11-15.)

To achieve a continuous data session, when caller ID is received, the bottom two layers namely, the physical and the data link layer, responsible for transmission, framing, and error control of the communications link may be modified. In one embodiment, the keep alive functionality 323 within the ISP modem 321 transmits "keep alive" packet streams to the higher TCP/IP protocol layer after the modem signal is interrupted. This deceives the higher TCP/IP layers and prevents the session from terminating. The "keep alive" packet stream may be either data bits or control signals or both, and located within the client modem 301, the ISP modem 321 or both. (Page 18, lines 16-23.)

Claim 20 depends from claim 19 and should be allowed for the same reasons.

### **3. Rejection of Claims 32-33, 40-42 and 70**

The Examiner has rejected claims 32-33, 40-42 and 70 as being anticipated by Civanlar. As discussed with the Examiner, applicants have amended claim 32 to recite: “an off-hook detector capable of detecting said handset going off-hook, while said communication device is in communication with said remote device, and further being capable of generating an attention signal in response thereto; and ... wherein said handset is placed off-hook by a user for dialing an outgoing call ....” According to Civanlar, the hold request is generated in response to a call waiting signal, not the handset going off-hook and, in fact, the handset is merely used to answer the incoming call. In contrast, claim 32, as revised, states that the hold request is generated in response to the handset going off-hook and that a user may dial an outgoing call.

Accordingly, applicants respectfully submit that claim 32 and its dependent claims 33, 40-42 and 70 should be allowed.

### **4. Rejection of Claims 44-45 and 54-56**

The Examiner has rejected claims 44-45 and 54-56 as being anticipated by Civanlar. Claim 44, as revised, in part recites: “detecting said handset going off-hook; transmitting a hold request to said second device in response to said handset going off-hook; ... dialing an outgoing call using said handset.” As discussed above, applicants respectfully submit that Civanlar does not teach the limitations of claim 44, as amended. Accordingly, it is respectfully that claim 44 and its dependent claims 45, 47, 48 and 54-56 should be allowed.

### **5. Rejection of Claims 63-65**

The Examiner has rejected claims 63-65 as being anticipated by Civanlar. Applicants respectfully disagree. Civanlar does not teach placing a communication between a first modem



and a second modem over a communication line on hold for a hold period, and switching the communication line from said first modem to the third modem, such that after expiration of the hold period, the second modem communicates with the third modem (as opposed to the first modem) over said communication line. The Examiner's attention is directed to the following excerpt from the present application:

Additionally, the ISP modem 125 might send a hold request to the client modem 103. While the client modem 103 is on hold, the ISP 107 can change the routing of the ISP modem 125, substitute another ISP modem automatically (for example when ISP modem 125 is having problems or is not optional for the client modem 103), etc. This will all happen without ever relinquishing any telephone link. (Page 15, lines 11-15.) (emphasis added.)

As discussed with the Examiner, it is respectfully submitted that Civanlar does not remotely teach or suggest “switching said communication line from said first modem to said third modem, such that after expiration of said period of time, said second modem communicates with said third modem over said communication line”, as recited in claim 63.

Accordingly, it is respectfully submitted that claim 63 and its dependent claims 64-65 should be allowed.

#### **6. Rejection of Claims 66 and 68**

The Examiner has rejected claims 66 and 68 as being anticipated by Civanlar. Claim 66, as revised, in part recites: “communicating information by said second modem with said first modem; ... manufacturing data by said second modem; and presenting said data by said second modem to said upper layer protocol during said ceasing step to maintain an appearance of being in said communicating step.” As explained in conjunction with patentability of claim 19, Civanlar does not discuss higher protocol layers in a network environment at all, but Civanlar is merely focused on the interactions between modem A 102 and modem B 104 and ignores the

implications of modem on hold in the network environment. Accordingly, it is respectfully submitted that for the reasons discussed in conjunction with claim 19, claim 66 and its dependent claim 68 should be allowed.

**7. Rejection of Claims 71 and 72**

The Examiner has rejected claims 71 and 72 as being anticipated by Civanlar. Claim 71, as revised, in part recites: “communicating information by said first modem with said second modem; ...manufacturing data by said first modem; and presenting said data by said first modem to said upper layer protocol during said ceasing step to maintain an appearance of being in said communicating step.” Applicants respectfully submit that claim 71, and its dependent claim 72, should be allowed for the same reasons stated above in conjunction with claims 66.

**8. Rejection of Claims 73-77**

The Examiner has rejected claims 73-77 as being anticipated by Civanlar. Applicants respectfully disagree. As discussed with the Examiner, Claim 73, in part, recites: “wherein a dial tone is received over said telephone line after said communication between said modems is placed on hold.” As explained, according to Civanlar, the user places the handset off-hook to answer a call waiting. When a call waiting is answered, no dial tone can be heard on the telephone line. Accordingly, Civanlar does not teach, disclose or suggest the limitations of claim 73. Applicants respectfully submit that claim 73, and its dependent claims 74-77, should be allowed.

**9. Rejection of Claims 79-83**

The Examiner has rejected claims 79-83 as being anticipated by Civanlar. Applicants respectfully disagree. As discussed with the Examiner, Claim 79, in part, recites: “receiving a dial tone over said telephone line.” Applicants respectfully submit that claim 79, and its

dependent claims 80-83, should be allowed for the same reasons stated above in conjunction with claims 73.

**C. Rejection of Claims 8-9 under 35 U.S.C. § 103(a)**

The Examiner has rejected claims 8-9 under 35 U.S.C. § 103(a) as being unpatentable over Civanlar, et al. (EP 0741481 A2) in view of Hamasaki (USPN 5,131,025). Claims 8-9 depend from claim 1, as amended. Accordingly, it is respectfully submitted that claims 8-9 are patentable at least for the same reasons stated in conjunction with claim 1, as amended.

**D. Rejection of Claim 69 under 35 U.S.C. § 103(a)**

The Examiner has rejected claim 69 under 35 U.S.C. § 103(a) as being unpatentable over Civanlar, et al. (EP 0741481 A2). Claim 69 depends from claim 1, as amended. Accordingly, it is respectfully submitted that claim 69 is patentable at least for the same reasons stated in conjunction with claim 1, as amended.

**E. Rejection of Claim 78 under 35 U.S.C. § 103(a)**

The Examiner has rejected claim 78 under 35 U.S.C. § 103(a) as being unpatentable over Civanlar, et al. (EP 0741481 A2) in view of Ko (USPN 5,684,825). Claim 78 depends from claim 73, as amended. Accordingly, it is respectfully submitted that claim 78 is patentable at least for the same reasons stated in conjunction with claim 73, as amended.

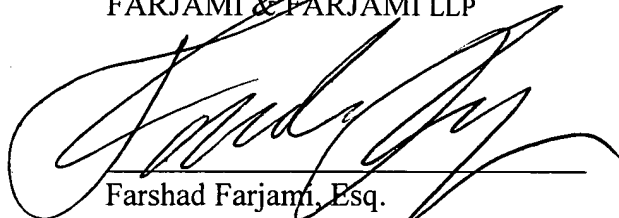
**F. Rejection of Claim 84 under 35 U.S.C. § 103(a)**

The Examiner has rejected claim 84 under 35 U.S.C. § 103(a) as being unpatentable over Civanlar, et al. (EP 0741481 A2) in view of Ko (USPN 5,684,825). Claim 84 depends from claim 79, as amended. Accordingly, it is respectfully submitted that claim 84 is patentable at least for the same reasons stated in conjunction with claim 79, as amended.

**G. Conclusion**

For all the foregoing reasons, an early allowance and issuance of claims 1, 8-10, 19-20, 32-33, 40-42, 44-45, 47-48, 54-56, 63-66 and 68-84 pending in the present application is respectfully requested. The Examiner is invited to contact the undersigned for any questions.

Respectfully Submitted;  
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